MINUTES

INSTALLATION RESTORATION PROGRAM

RESTORATION ADVISORY BOARD MEETING

ABERDEEN PROVING GROUND, MARYLAND

THURSDAY, 6 MARCH 2003

7:00 p.m. – 10:15 p.m.

EDGEWOOD SENIOR CENTER

RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING:

Ms. Glenda Bowling
Mr. Gary Browning (Alternate for Mr. Kevin Barnaba)
Mr. Arlen Crabb
Mr. Curtis DeTore (Maryland Department of the Environment)
Mr. Roy Dietz
Ms. Mandi Elliott-Bird
Ms. Christine Grochowski (Community Co-Chair)
Mr. Ted Henry (via conference call)
Mr. Greg Kappler
Mr. Thomas McWilliams, Jr.
Mr. Doug Richmond (Harford County Emergency Operations Center)
Mr. Ken Stachiw (Army Co-Chair)
Mr. Frank Vavra (U.S. Environmental Protection Agency)
Mr. Dennis Warwick
Ms. Ruth Ann Young

RESTORATION ADVISORY BOARD MEMBERS NOT PRESENT AT THIS MEETING:

Dr. Nasrin Begum
Ms. Loretta McCullah
Mr. Dan Pazdersky

ENCLOSURES TO THESE MINUTES:

1: Roster of Meeting Attendees
2: Agenda
3: March 2003 Calendar of Events
4: Unexploded Ordnance (UXO) Incident Reports
5: O-Field Study Area Update Presentation Materials
6: Proposal for Maintaining National Security and Environmental Restoration at APG

I. EXECUTIVE SUMMARY

Administrative Comments

Mr. Stachiw informed the RAB Members that the annual RAB tour of an APG site has been scheduled for Saturday, 15 March 2003. RAB Members should meet at the General Physics Corporation office at 9:00 am to depart for the Aberdeen Area of APG. The annual RAB budget meeting will be scheduled during March 2003. The RAB Members will be polled to establish an agreeable date and time for the meeting.

Lauderick Creek Chemical Warfare Materiel (CWM) Removal Action Update

Mr. Billy Sanders (U.S. Army Corps of Engineers (USACE) Environmental Remediation Resident Office (ERRO)) provided an update regarding the Lauderick Creek CWM Removal Action. A total of 15,501 anomalies have been identified, with 497 anomalies identified since the 30 January 2003 RAB meeting. One livens, one M5 3-inch training round, and two 4.2" mortars were investigated since the January RAB meeting. A total of 513 grids have been completed, with 10 grids completed since the 30 January 2003 RAB meeting. An updated Summary of Liquid Filled Munitions from the Lauderick Creek CWM Removal Action project was provided. Several items are awaiting destruction and one liquid filled munition, excavated on 21 October 2002, is awaiting assessment.

Perchlorate Detection Update

Mr. Stachiw provided an update on the perchlorate detections in the City of Aberdeen and Harford County production wells. Sampling completed on 19 February 2003 detected perchlorate concentrations of ranging from 1.7 to 1.9 parts per billion (ppb) in City of Aberdeen production (CAP) wells 3, 8, 9, and 10. Perchlorate was detected at 1 ppb in the finished water. CAP well 4 was off-line therefore no sample was collected. Perchlorate concentrations below the 1 ppb reporting limit and ranging from 0.38J to 0.80J ppb (J denotes an estimated value) were reported for the remaining six CAP wells. Perchlorate sampling completed by the City of Aberdeen on 25 February 2003 had results of less than 1 ppb in nine of the 11 CAP wells and in the finished water. CAP well 4 was off-line therefore no sample was collected. Perchlorate was detected at CAP well 3 at a concentration of 1.4 ppb, exceeding the reporting limit of 1 ppb. The wells are sampled on a weekly basis. The Harford County production (HCP) wells were sampled on 25 February 2003. Perchlorate was detected in eight of the nine wells and finished water at concentrations ranging from 0.20J to 0.48J ppb, below the reporting limit of 1 ppb.

O-Field Study Area Update

Ms. Cindy Powels (DSHE ECRD Project Officer) completed an update on the O-Field Study area. A Record of Decision (ROD) was signed in September 1997 for O-Field Operable Unit (OU) 3, Watson Creek. The ROD mandated limited action, long-term monitoring, and institutional controls. The sediment sampling results from September 2002 are generally consistent with the historical data. The constituents of concern (COC) metals have average concentrations that are higher than reference background averages. The yearly average concentrations of most of the COCs show downward trends, but much variability and uncertainty remains.

The Watson Creek 2002 mummichog tissue data results are generally consistent with the two previous sets of data and with the reference background data site. No discernable trends were observed. Largemouth bass were not available for screening in the year 2002. Prior year bass results were compared to the Maryland Department of the Environment (MDE) risk-based screening of metals in Maryland finfish tissue. A direct comparison is not possible because the Watson Creek data was for whole body, and the MDE report data is for the filet, or muscle of the fish. The Watson Creek Year 2002

report will be submitted to the Army in March 2003. The report will encompass residue effects assessment, food web modeling, comparison of largemouth bass tissue data to the MDE data for Chesapeake Bay tributaries, and the schedule for year 2003 sampling and monitoring.

The waste recovery effort at New O-Field (OU4) began in October 2001. Seven removal action areas were identified for waste recovery. Waste recovery efforts have been completed for Areas 1, 2, 3, 5, and 6. Current site operations are ongoing in Area 4. Upon completion of Area 4, removal action operations will begin in Area 7. Surface wastes include soil, and large items such as lab ware and building waste. Subsurface wastes include pulverized materials with varying compositions of ash, soil, metal fragments, bulk concrete, steel, glassware, and reportable and non-reportable items. The project schedule for the New O-Field removal action operations includes completion of waste recovery operations for Area 4 and Area 7 in the Spring 2003, collection of confirmation samples and quality assurance and quality control of all areas in the Spring 2003, ongoing waste screening and processing, and completion of waste screening and material handling in the Winter 2003.

The Feasibility Study (FS) Report identified four areas of concern including surface UXO and wastes in the marsh and woods areas, sediment in the marsh and drainage area, disposal trenches, and groundwater. The FS report is currently on hold pending additional investigation and a removal action in the Pushout Area. Based on a January 2002 meeting held with the US Environmental Protection Agency (USEPA) Region III Biological Technical Assistance Group (BTAG), the existing risk assessment satisfies the requirements of Steps 1 through 3 of the new EPA guidance. Additional risk assessment activities (Steps 4 through 8) will be necessary prior to the completion of the FS. The next phase in the process is to update the Step 3 problem formulation to include recent removal action progress, followed by the development of a Step 4 Work Plan, which will outline the additional work needed to fill data needs. Additional groundwater and sediment data was collected in the Spring 2002. The preliminary screening for the Natural Attenuation Assessment indicated adequate evidence for anaerobic biodegradation at New O-Field.

Ongoing efforts for the FS report include groundwater data incorporation to the revised draft of *New O-Field Groundwater Evaluation: Selection of Contaminants of Potential Concern and Assessment of Natural Attenuation*. The 2002 sediment data and new data from confirmation soil and surface water sampling planned in the Pushout Area will be used to define and focus sampling efforts in the Step 4 Work Plan. New O-Field removal action and activities were discussed at a 6 March 2003 meeting with EPA, MDE, the Biological Technical Assistance Group (BTAG), and the Technical Assistance Grant (TAG) consultant for the Aberdeen Proving Ground Superfund Citizens Coalition (APGSCC).

Operations Security (OPSEC) Procedures Discussion

Mr. Stachiw distributed a copy of a proposal for maintaining National Security and Environmental Restoration at APG. Mr. Ted Henry (RAB Member) and Mr. Stachiw drafted the proposal. The proposal addressed needs and goals, a proposed data security task group, proposal for map dissemination, and other related general issues. The RAB Members reviewed the proposal and discussed related issues with Mr. Joe Kaffl (OPSEC). A closed-door meeting will be held at the 27 March 2003 RAB Meeting with Mr. Kaffl and the RAB Members in an attempt to come to an agreement regarding the security procedures used in the review of IRP documents for release to the public. At the closed-door meeting, Mr. Kaffl will review and explain the use of the Essential Elements of Friendly Information (EEFI) to determine if documents are releasable to the public.

II. OPENING REMARKS AND ADMINISTRATIVE COMMENTS

The February 2003 U.S. Army Garrison Aberdeen Proving Ground (APG) Installation Restoration Program (IRP) Restoration Advisory Board (RAB) meeting was called to order by Mr. Kenneth Stachiw (Chief, Directorate of Safety, Health and Environment (DSHE) Environmental Conservation and Restoration Division (ECRD); Army Co-Chair) at 7:00 p.m. on Thursday, 6 March 2003. The meeting was postponed from 26 February 2003, due to inclement weather. The meeting took place at the Edgewood High School located at 2415 Willoughby Beach Road in Edgewood, Maryland.

Enclosure 1 to these minutes is a meeting attendance list. RAB Members in attendance received an agenda (Enclosure 2), a RAB calendar of events for March 2003 (Enclosure 3), Unexploded Ordnance (UXO) Incident Reports (Enclosure 4), a copy of the O-Field Study Area Update presentation (Enclosure 5), and a copy of the proposal for maintaining National Security and Environmental Restoration at APG (Enclosure 6).

Mr. Stachiw noted that the minutes of the 30 January 2003 RAB Meeting had been mailed to the RAB Members. [Note: Comments or corrections to the minutes should be provided to Mr. Stachiw or to Ms. Karen Jobes. Mr. Stachiw and Ms. Jobes can be reached at 410-436-3320.]

Mr. Stachiw informed the RAB Members that the annual RAB tour of an APG site was scheduled for Saturday, 15 March 2003. RAB Members should report to the General Physics Corporation office at 9:00 am to depart for the Aberdeen Area of APG. Mr. Stachiw stated that the annual RAB budget meeting will be scheduled during March 2003. The RAB Members will be polled to establish an agreeable date and time for the meeting.

After confirming the RAB Members had no further comments, Mr. Stachiw introduced Mr. Billy Sanders (U.S. Army Corps of Engineers (USACE) Environmental Remediation Resident Office (ERRO)) to provide the Lauderick Creek Chemical Warfare Materiel (CWM) Removal Action Update.

III. LAUDERICK CREEK CWM REMOVAL ACTION UPDATE

Mr. Sanders reported that a total of 15,501 anomalies have been identified, with 497 anomalies identified since the 30 January 2003 RAB meeting. One Livens, one M5 3-inch training round, and two 4.2" mortars were investigated since the January RAB meeting. A total of 513 grids have been completed, with 10 grids completed since the 30 January 2003 RAB meeting. Approximately 28 grids remain for investigation to complete the Removal Action Operations.

Mr. Sanders provided an update for the Summary of Liquid Filled Munitions from the Lauderick Creek CWM Removal Action project. Several items are awaiting destruction and one liquid filled munition, removed from Grid C7, excavated on 21 October 2002, is awaiting assessment.

Mr. Sanders stated that the Removal Operations have been slow due to the snow accumulation. Schonstedt magnetometers are not effective in over 5 inches of snow, and the work speed has been reduced by 20-30 percent. One burster tube with white phosphorus was found near the tennis courts. Mr. Sanders stated that Removal Actions will concentrate in the building complex area, which is approximately 10 grids. Since the majority of the contacts in the area are due to utilities, Mr. Sanders anticipates finding little or no munitions-related items. Future plans also include returning to three grids along a stream bank once the snow melts.

Mr. Stachiw questioned how long removal action operations will continue. Mr. Sanders explained that, pending no additional snow or flooding, operations in the remaining 28 grids should be complete in three weeks.

Ms. Glenda Bowling (RAB Member, APGSCC) inquired about an alligator mine which Mr. Sanders referred to in the 24 October 2002 Lauderick Creek update. Mr. Sanders explained that it was a land mine, which he referred to as an "alligator mine." The mine was used for training and contained no explosive charge. The discovery of the land mine, which dates back the pre-WWI timeframe, was unexpected.

After confirming the RAB Members had no further comments, Mr. Stachiw provided an update on the perchlorate detections.

IV. PERCHLORATE DETECTIONS UPDATE

Mr. Stachiw displayed a graphic of a map depicting the Western Boundary Study Area, the City of Aberdeen Production (CAP) wells, Harford County Production (HCP) wells, Operable Units 1 and 2 (OU 1 and OU 2), and the Chesapeake Bay. He displayed a graphic of the 11 CAP wells and the 25 February 2003 perchlorate sampling results. With a reporting limit of 1 ppb perchlorate, wells 1, 2, and 5 through 11 had results less than 1.0 ppb. CAP well 3 had a perchlorate result of 1.4 ppb. The finished water had a perchlorate result of less than 1.0 ppb. CAP Well 4 is off-line and was not sampled.

Mr. Stachiw next displayed a graphic of the 19 February 2003 perchlorate sampling results for the CAP wells. The reporting limit for perchlorate is 1 ppb. CAP well 1 had a concentration of 0.78J ppb. The J qualifier indicates that the value is less than the reporting limit (1 ppb) but greater than the method detection limit (MDL of 0.2 ppb) The data reported was as follows. Well 2: 0.48J ppb; Well 3: 1.9 ppb; Well 4: off-line and not sampled; Well 5: 0.41J ppb; Well 6: 0.40J ppb; Well 7: 0.38J ppb; Well 8: 1.7 ppb; Well 9: 2.6 ppb, Well 10: 2.7 ppb, Well 11: 0.80J ppb.

Mr. Stachiw displayed a graphic of the HCP wells and the 25 February 2003 perchlorate sampling event results. Martel Laboratories, Inc. and GPL Laboratories, LLLP sampled the wells. For each well, the Martel results are listed first. The perchlorate results have a reporting limit of 1 ppb. HCP 1: ND (below the MDL of 0.20 ppb), no results; HCP 2: 0.40J ppb, 0.48J ppb; HCP 4: 0.20J ppb, 0.53J ppb; HCP 5: 0.30J ppb, 0.24J ppb; HCP 6: ND, 0.30J ppb; HCP 8: ND, 0.38J ppb; HCP 8 Duplicate: ND, 0.48J ppb, HCP 9: ND, 0.46J ppb; Carbon Treatment Plant (GAC) Influent: 0.20J ppb, 0.38J ppb; GAC Effluent: ND, 0.30J ppb; Finished Water: ND, 0.37J ppb; Finished Water Dup.: ND, 0.41J ppb. None of the wells had a reported perchlorate level greater than 1.0 ppb.

Mr. Stachiw commented that the only HCP well with previously reported perchlorate detections was HCP 9; now all of the HCP wells have reported perchlorate detections at less than the reporting limit but greater than the MDL of 0.2 ppb (i.e. "J" values). The J-values are under further investigation in an effort to avoid false positives due to laboratory matrix interference. Non-military perchlorate sources are being evaluated. Mr. Stachiw referenced a report stating that Chilean fertilizer might be a perchlorate source. Harford County officials are also evaluating a Penn State process that uses carbon filters to remove perchlorate.

Mr. Arlen Crabb (RAB Member) questioned if samples were taken in the northern areas near Phillips Air Field and the golf course vicinity. Mr. Stachiw replied that Mr. Paul Miller (US Army Corps of Engineers (USACE) Waterways Experiment Station (WES)) believes that the groundwater flows from the north, but he will examine the issue further.

Mr. Greg Kappler (RAB Member, various committees) inquired if more than one aquifer exists in the areas. Mr. Stachiw stated he would refer the question to Mr. Miller to provide the answer.

Mr. Stachiw recounted that Mr. Miller believes fertilizer could be a source for the perchlorate. Mr. Frank Vavra (US Environmental Protection Agency (USEPA)) is currently considering the use of different analytical methods to verify the perchlorate results. Unlike ion chromatography, Mr. Vavra explained, sequential mass spectroscopy can determine the exact ion detected. The EPA has not yet approved the method, but if used, perchlorate could be detected at levels of 0.2-0.25 ppb.

Ms. Bowling questioned if the perchlorate contamination could be from the Aberdeen well field traveling to the Perryman area. Mr. Stachiw replied that potential source transport from OU 2 to OU 1 would be examined. A perchlorate tracer needs to be found to confirm that the groundwater flow is reversed in that area, allowing the transport of perchlorate. OU 2 has a definable plume with perchlorate values of 10 to 12 ppb, while OU 1 does not have a definable plume at this time (with perchlorate levels less than 1 ppb). Thus, the perchlorate analysis needs to be correct and accurate at low levels to trace any perchlorate transport.

Mr. Vavra inquired if, with the military's vested interest in the perchlorate issue, investigation into fertilizer as the cause has taken place. Mr. Stachiw stated that he was not certain if there is an army-wide investigation. He stressed the need to make certain that the perchlorate analysis is correct and accurate at low levels so that the detected chemical can be verified as perchlorate.

Mr. Roy Dietz (RAB Member) suggested that the ion-exchange technology discussed during the 30 January 2003 RAB Meeting by Dr. Michael Major, (Diplomate of the American Board of Toxicology (DABT), U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM)) could effectively remove the low level of perchlorate, if necessary.

Ms. Christine Grochowski (RAB Member, Community Co-Chair) questioned if the Chilean fertilizer would have been used many years ago or recently to cause the perchlorate detections. Mr. Stachiw explained that perchlorate does not rapidly break down to form other compounds, does not naturally attenuate, and moves quickly (estimated 100 feet per year in OU 1). Given these characteristics, if the source is fertilizer, perchlorate contamination would likely have to have resulted from recent use. However, Mr. Stachiw explained, perchlorate was not measured until recently so it is difficult to confirm its source.

After confirming the RAB Members had no further comments, Mr. Stachiw introduced Ms. Cindy Powels (DSHE ECRD Project Officer) to conclude the O-Field Study Area Update.

V. O-FIELD STUDY AREA UPDATE

Ms. Powels provided an update on Watson Creek surface water and sediments (OU 3) and New O-Field source area and groundwater (OU 4). OU 1 and OU 2 were updated during the 24 October 2002 RAB Meeting.

Watson Creek Surface Water and Sediments (OU 3)

A Record of Decision (ROD) was completed in September 1997 for O-Field OU 3, Watson Creek. The ROD mandated limited action, long-term monitoring, and institutional controls. The fourth year of monitoring was completed in September 2002. Fourth year results will be reported in March 2003. Long-term monitoring was conducted in order to identify changes in contaminant distribution in sediment following storm events and assess impact on ecological risk; identify long-term trends in sediment contamination and associated increased ecological risk; and to assess bioaccumulation in the Watson Creek ecosystem with potential ecological or human health impacts.

In summary, sediment samples were collected and analyzed for metals, pesticides and Acid Volatile Sulfides/Simultaneously Extracted Metals (AVS/SEM), which is a method used to assess the bioavailability of metals. Mummichog were collected and tested for metals and pesticides. Since the sampling event occurred late in the season, largemouth bass were not obtained in 2002 for testing.

The sediment sampling results from September 2002 are generally consistent with the historical data with the exception that DDT and its daughter products (DDT_r) were not been detected in any sediment samples. The constituents of concern (COC) metals are arsenic, copper, mercury, silver, and zinc. The COC metals have average concentrations that are higher than reference background averages. The yearly average concentrations of most of the COCs show downward trends, but much variability and uncertainty remains.

The Watson Creek 2002 mummichog tissue data results are generally consistent with the two previous sets of data, although mercury levels are slightly lower. The constituent levels in Watson Creek mummichog tissue were generally consistent with the reference background site data, collected from Woodland Creek on the Sassafras River. Copper is higher at Watson Creek, and mercury and DDE are lower. No discernable trends were observed.

Largemouth bass were not available for screening in the year 2002. Prior year bass results were compared to the Maryland Department of the Environment (MDE) risk-based screening of metals in Maryland finfish tissue. Watson Creek bass levels do not exceed the screening levels developed by MDE. However, a direct comparison is not possible because the Watson Creek data was for whole body, and the MDE report data is for the filet, or muscle of the fish. Additionally, the Watson Creek data suggests that mercury in fish tissue does not pose a threat to human health. The mercury screening level for a child is 0.55 mg/kg.

The Watson Creek Year 2002 report will be submitted to the Army in March 2003. The report will encompass a residue effects assessment, in which fish tissue data is evaluated to determine the effects on the fish and not just on the food chain. Food web modeling, comparison of largemouth bass tissue data to the MDE data for Chesapeake Bay tributaries, and the schedule for year 2003 sampling and monitoring will also be included.

New O-Field Source Area and Groundwater (OU 4)

The waste recovery effort at New O-Field (OU 4) began in October 2001. Seven removal action areas were identified for waste recovery. Waste recovery efforts have been completed for Areas 1, 2, 3, 5, and 6. Current site operations are ongoing in Area 4. Upon completion of Area 4, removal action operations will begin in Area 7. Surface wastes include soil, and large items such as lab ware and building waste. Subsurface features include pulverized materials with varying compositions of ash, soil, metal fragments, bulk concrete, steel, glassware, and reportable and non-reportable items. The project schedule for the New O-Field removal action operations includes completion of waste recovery operations for Area 4 and Area 7 in the Spring 2003, collection of confirmation samples and quality assurance and quality control of all areas in the Spring 2003, ongoing waste screening and processing, and completion of waste screening and material handling in the Winter 2003.

Surface features (mounds in areas 5 and 6) were found to be predominately soil and large items such as lab ware and building waste. As of 24 February 2003, generated waste consists of 8152 items that are non-energetic UXO-related scrap; 13,968 cubic yards (cy) of waste with a mixed composition of ash, soil, glass, metal, concrete, and other miscellaneous waste; 800 cy of concrete were managed onsite; 75 cy steel; and 344 items that were intact or thought to contain energetics (examples of energetics are fuzes, burster tubes, or fills). Those items are “reportable items.”

Ms. Powels displayed several graphics of the New O-Field area. The first photograph depicted conditions in August 2001, emphasizing the extent of vegetation growth in Areas 6 and 2 following the previous year's clearance for the site characterization task. For Area 5, photographs of visible waste, vegetation, vegetation clearance in preparation for waste recovery operations, a concrete pile from surface recovery, the cleared site, and remaining waste piles were displayed. Additionally, a photograph of Area 5 at 90 percent completion depicted the soil pile generated by surface grading in an attempt to recover fragmented pieces of building waste from the base of Area 5 mounds.

Photographs of Areas 2 and 3 were displayed to illustrate the perimeter silt fence, initiation of waste recovery at the northeast extent of Area 2, the composition of the wastestream featuring over 3000 M4/M5 floating smokepots, and the proximity to Watson Creek and its tributary from the center of New O-Field.

Mr. Kappler inquired about the depth of excavation for waste removal. Mr. Jason Ebrite (General Physics Corporation) replied that while the excavated depth varied, the average was 8 feet. However, some of the waste was pushed into the clay at depths of 15 feet.

Upon viewing a photograph of Area 2's first signs of waterfowl, Mr. Vavra questioned if an effort was made to verify the absence of white phosphorus particles in the pond, which can harm waterfowl. Ms. Powels responded that the area was excavated and cleared down to the natural clay layer so there should not be any white phosphorus. However, after the detonation of the 1000-pound white phosphorus bomb, white phosphorus may have landed in the pond. The white phosphorus issue should be further addressed. Ms. Powels displayed a graphic depicting a "resin or epoxy"-filled drum and a concrete filled drum. Both of the items are currently segregated as assessment and handling requirements are evaluated. Mr. Kappler requested that the RAB Members be informed of the contents of the epoxy-filled drum after further examination.

Ms. Powels recounted that during excavation and waste recovery operations in Area 1, a small quantity of green "liquid" appeared to percolate from undisturbed waste adjacent to the working face. Site monitoring with the individual chemical agent detector (ICAD), organic vapors monitor (OVM), and Depot Area Air Monitoring System (DAAMS) tubes indicated no detections. Laboratory analysis revealed a variety of metals. Close inspection of the material suggested particulate matter similar to a fluorescence dye. Two small glass bottles were recovered during excavation and waste recovery operations in Area 1. One bottle contained a cleaning compound.

A graphic of a stacking conveyor, which will serve as a "picking table" at the commencement of waste screening operations, was displayed. The stockpiles will be screened several times in an attempt to recover tangible waste from the pulverized material. It may not be possible to segregate clean soil for reuse due to the extent that the waste material was crushed and mixed with the soil matrix. The 4-foot by 4-foot boxes shown in the photograph contain only tangible items recovered at the time of excavation.

Area 1 has a stockpile of recovered material staged for drying. Small quantities of white phosphorus are present throughout the wastestream, which is revealed during the handling and staging operations. Managing the white phosphorus component of the wastestream will be paramount to defining disposal alternatives. The white phosphorus smokes when it is exposed to air and quickly burns off.

Future efforts for the New O-Field Removal Action include completion of waste recovery in Areas 4 and 7 and transition from removal operations to waste management. In those areas, waste screening and transition site operations will continue in conjunction with recovery. Sediment data will be collected

from areas cleared of waste. The data will be incorporated into a risk evaluation following QA/QC of the areas. Additional waste removal actions may be necessary once the waste material found in the subsurface at the southern extent of Area 5 and the volume and character of waste from the southern portion of Area 3 and open burn trenches are characterized. The fate of the newly created pond and its new habitat will be determined.

Ms. Powels recounted several points of interest found during the waste recovery. A contiguous root mat divided the Area 1 waste blanket. The waste blanket's thickness varied up to 8 feet. Small quantities of white phosphorus are found throughout portions of the waste blanket, which will define screening protocols and waste disposal alternatives. The native wetland vegetation is well established within the excavation site boundaries less than six months following the waste recovery.

The current project schedule plans that waste operations will be complete in Areas 4 and 7 in the spring of 2003. Collection of confirmation samples and QA/QC of all areas will be completed in the spring of 2003. Waste screening and material handing will conclude in winter 2003.

The draft final Feasibility Study (FS) Report (September 1999) identified four areas of concern including surface UXO and wastes in the marsh and woods areas, sediment in the marsh and drainage area, disposal trenches, and groundwater. The FS report is currently on hold pending additional investigation and a removal action in the Pushout Area. Three remediation alternatives were developed in the draft final FS for sediment in the marsh and drainage area. These alternatives are no action, institutional controls and long-term monitoring, and sediment removal and off-site disposal. Considerable soil and ash material has been removed from the marsh; confirmation sampling will be conducted in spring 2003. All new data will be incorporated into the risk assessment.

Five alternatives were developed in the draft final FS for disposal trenches: no action; institutional controls; soil cover over two open trenches and repair of covered trenches; excavation, on-site treatment, and off-site disposal; and excavation, and off-site disposal. Currently, any remedial action is on hold, pending completion of the risk assessment. The groundwater alternatives developed in the draft final FS are no action; institutional controls and monitored natural attenuation; phytoremediation; and in-situ biodegradation. This remedial action decision is also on hold, pending completion of the groundwater evaluation.

Based on a January 2002 meeting held with the US Environmental Protection Agency (USEPA) Region III Biological Technical Assistance Group (BTAG), the existing risk assessment satisfies the requirements of Steps 1 through 3 of the new EPA guidance. Additional risk assessment activities (Steps 4 through 8) will be necessary prior to the completion of the FS. The next phase in the process is to update the Step 3 problem formulation to include recent removal action progress, followed by the development of a Step 4 Work Plan, which will outline the additional work needed to fill data needs. Additional groundwater and sediment data was collected in the Spring 2002. The preliminary screening for the Natural Attenuation Assessment indicated adequate evidence for anaerobic biodegradation at New O-Field.

In April 2002, sediment, surface soil, and surface water sampling events occurred. Two samples were collected at each of the 10 sediment locations, at 0-6 inches (A) and 6-12 inches (B) below ground surface (bgs). All of the samples were analyzed for Target Analyte List (TAL) metals. Most of the highest metals concentrations were in the shallow "A" sediment samples, particularly N-OFLD101A located near the boundary of the Pushout Area. Copper and zinc were detected above the concentrations found in Watson Creek sediment. Maximum concentrations of arsenic, mercury, and silver were detected below the concentrations in Watson Creek. Other elevated metals included aluminum, barium, cadmium, cobalt, iron, lead, and vanadium. For surface soil sampling, locations N-OFLD80 and N-OFLD82 were re-

sampled. N-OFLD80 was analyzed for explosive compounds since pentaerythritol tetranitrile (PETN) was previously detected at 33.6 mg/kg. Since thiodiglycol was previously detected at 18 mg/kg in N-OFLD82, the sample was analyzed for mustard degradation products. All of the results were non-detect, perhaps indicating that the previous detections were anomalies. One surface water sample, N-OFLD93 was collected from the general location of N-OFLD70, which contained high metals concentrations in December 1997. The results were not repeated and the concentrations from 1997 were likely due to traces of sediment in the sample. Therefore, additional sediment samples will be collected.

Ms. Powels next discussed the assessment of natural attenuation as a remedial alternative. For the preliminary screening, groundwater samples were collected in December 1997, April 2001, and May 2002. The samples were analyzed for the presence of select cations and ions (i.e., chloride, ferrous iron, nitrate, nitrite, sulfate, sulfide, and carbonate) and the dissolved gases of hydrogen, methane, ethane, ethene, nitrogen, oxygen, and carbon dioxide. The data were screened based on techniques outlined in the Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater (USEPA, 1998). The preliminary screening indicated adequate evidence of anaerobic biodegradation at New O-Field. Significant concentrations of dichlorethylene (DCE) and vinyl chloride and low concentrations of ethene, ethane, and methane (daughter products of trichloroethylene (TCE)) were detected. However, over the long term, the decreasing concentrations of electron donors may inhibit complete attenuation. Relative redox couple concentrations indicate that the dominant terminal electron accepting process occurring within the New O-Field unconfined aquifer is iron reduction. Dissolved hydrogen concentrations also indicate that the dominant terminal electron accepting process is iron reduction. The presence of terminal electron acceptors nitrate (denitrification) and sulfate (sulfate reduction) may inhibit the rapid attenuation of chlorinated solvents. Although the data indicate that rapid attenuation might be inhibited, it appears that the reduction of perchloroethylene (PCE), and TCE to DCE and vinyl chloride is occurring within the New O-Field unconfined aquifer. However, the aquifer's overall depleted concentrations of electron donors may limit the attenuation process to reduction to vinyl chloride.

Biodegradation rates were estimated using first-order kinetics and the New O-Field chemical data. The first number listed is based on surface water criteria, the second on MCLs. The time needed to achieve cleanup goals was estimated for the primary COCs. For PCE: goal of 98 ug/L requires 14 yrs; and MCL or 5.0 ug/L requires 48 yrs. For TCE: goal of 47 ug/L requires 33 yrs; and MCL or 5.0 ug/L requires 68 yrs. For 1, 2 DCE: goal of 590 ug/L requires 3.4 months; and MCL or 70 ug/L requires 15.5 yrs. Appropriate criteria need to be discussed for cleanup goals.

Ongoing efforts for the FS report include groundwater data incorporation to the revised draft of *New O-Field Groundwater Evaluation: Selection of Contaminants of Potential Concern and Assessment of Natural Attenuation*. The 2002 sediment data and new data from confirmation soil and surface water sampling planned in the Pushout Area will be used to define and focus sampling efforts in the Step 4 Work Plan. New O-Field removal action and activities were discussed at a 6 March 2003 meeting with EPA, MDE, the Biological Technical Assistance Group (BTAG), and the Technical Assistance Grant (TAG) consultant for the Aberdeen Proving Ground Superfund Citizens Coalition (APGSCC).

VI. INTERMISSION

At 8:20 p.m., upon completion of the remarks, Mr. Stachiw announced a brief intermission for refreshments. At 8:35 p.m., the meeting resumed.

VII. OPERATIONS SECURITY (OPSEC) PROCEDURES DISCUSSION

Mr. Stachiw distributed a copy of a proposal for maintaining National Security and Environmental Restoration at APG. Mr. Ted Henry (RAB Member) and Mr. Stachiw drafted the proposal. The proposal addressed needs and goals, a proposed data security task group, a proposal for map dissemination, and other related general issues. The RAB Members reviewed the proposal and discussed related issues with Mr. Joe Kaffl (OPSEC). Mr. Henry joined the discussion via teleconference.

Mr. Stachiw began by discussing the proposal for map dissemination. Mr. Stachiw explained that a three-tiered approach is proposed to address map dissemination. The first tier would involve modifying documents so that the maps do not include any information that would restrict the document from being released to the public (i.e. fence lines, roads, and buildings). Tier 2 addresses those documents with maps that must show production wells, fence lines or buildings that are both germane to understanding the contamination problem and are security-sensitive. For those documents, Mr. Kaffl would approve those documents with a limited distribution stamp for government, contractor, and RAB Member use only. Tier 3 addresses information that would fall under Tier 2 but needs to be disseminated to the public. The proposal suggested that a data security task group would then meet in an attempt to identify a solution.

Mr. Stachiw read the RAB needs and questions as listed in the proposal. The first need was to identify a clear list of what these items are of security concern and, thus, not permitted for public/press release. Mr. Stachiw explained that the need could be met through a future closed-door meeting with Mr. Kaffl. The meeting would provide an opportunity for Mr. Kaffl to review and explain the Essential Elements of Friendly Information (EEFI) used to determine if documents and figures are releasable to the public. Mr. Henry agreed that it would be helpful to have a meeting so that the RAB Members may become educated about the EEFI. Mr. Stachiw stated that the closed-door meeting would be held during the 27 March 2003 RAB meeting.

Mr. Stachiw stated that the second RAB need in the proposal addressed the use of an OPSEC approved generic base map for APG. Mr. Stachiw passed around a copy of base map for the RAB Members to review. The RAB Members will be provided with copies of the APG maps for the Edgewood and Aberdeen Areas as an attachment to the meeting minutes. Mr. Kaffl explained that the map is similar to the standard Harford County Alexandria Drafting Company (ADC) Map. The Army does not have copywriting privileges for the ADC maps, therefore the existing GIS data base was used to develop a base map. Test tracts and several secondary roads, depicted on the ADC map, are not included on the new APG base map.

Ms. Grochowski asked if OPSEC would have any objections to including the adjacent off-post communities on the map. She stated that including the communities would provide a good point of reference. Mr. Kaffl stated that OPSEC would have no objections to including the neighboring communities on the map.

Mr. Henry requested a printed copy of the standards used in developing the map, with regards to what items are acceptable to be included on the map. Mr. Kaffl agreed that a list could be provided to the RAB Members that details the standards that were used to develop the base map.

Mr. Stachiw stated that the last RAB need listed in the proposal addressed the recent issue of the TAG receiving a document with the figures removed. Mr. Stachiw stated that the issue has been resolved, and revolved around the TAG requesting an unrestricted version of the Northern Bush River Remedial Investigation Report. Ms. Sarah Coffey (General Physics Corporation) reported that the document was to be provided to Dr. Cal Baier-Anderson (TAG Consultant) at the 6 March 2003 RAB Meeting. Due to Dr. Baier-Anderson's absence, the document will be forwarded to her via Federal Express on 7 March 2003.

Mr. Stachiw reported that a suggestion was made in the proposal for the RAB Members to each have a lockbox for storing any documents that are approved by OPSEC for government, contractor, and RAB Member use only. Mr. Stachiw stressed that the lockbox would not be a requirement, and was only included as a possible mechanism that would assist the RAB Members in keeping track of any security sensitive documents. Mr. Kaffl added that a concern is that the information will end up on the Internet.

Mr. Kaffl stated that a great deal of sensitive information is already on the Internet, but the concern is that the problem is not perpetuated by additional sensitive information being posted on the Internet. Mr. Henry added that the lockbox was only a suggestion and he is open to other ideas or suggestions from the RAB Members. Mr. Stachiw stated that the RAB Members should bring any additional suggestions to the 27 March 2003 RAB meeting.

Mr. Stachiw reported that another suggestion included in the proposal was to use the new OPSEC stamp (for government, contractor, and RAB Member use only) on the figures or maps in question instead of restricting the entire document. Mr. Kaffl stated that he would consider the suggestion of only restricting the figures or maps.

Mr. Curtis DeTore (MDE) expressed concern that any document received by MDE and EPA, with or without a limited distribution statement, is subject to a Freedom of Information Act (FOIA) request. By law, if a FOIA request is submitted for a document, MDE is required to allow the document to be reviewed regardless of a limited distribution statement. Mr. DeTore added that if a document with a limited distribution statement is submitted to MDE for comments, due to the restriction statement, MDE is required to refuse the document and return it without comment.

Mr. Vavra suggested that if a stamp is only applied to figures or maps containing sensitive information, a note should be added to the cover of the document stating that the document contains restricted information. Mr. Vavra added that if the EPA receives a FOIA request for a document that has been stamped for limited distribution, the EPA can defer the FOIA request to the Army. OPSEC would then evaluate the FOIA request to determine if the public could review the document and/or maps.

Mr. Vavra stated that MDE and EPA have an investigative responsibility to identify environmental problems. Mr. DeTore added that without proper information included on a map, one could potentially choose a sample location in what appears to be an open area, when in reality the location is actually a building or parking lot. Mr. Stachiw speculated that, in order to make the documents useful for environmental investigation, there will be a great number of documents that will be stamped for limited distribution.

Mr. Henry suggested that a system be developed to track any FOIA requests that are received with regards to environmental issues. Mr. Henry requested information from MDE and EPA that outlines their agency policies on FOIA requests. Mr. Henry requested that MDE and EPA provide the RAB Members with a summary of their needs for what should be included in documents and figures to allow a complete technical review.

Mr. Kaffl stated his belief that a Maryland law exists regarding the protection of infrastructure. The law would protect some of the FOIA requests for documents with a limited distribution statement. Mr. Kaffl stated that an investigation should be completed to determine the details the FOIA laws that would apply to the MDE and EPA regarding documents with OPSEC approval for contractor and government use only.

Mr. Stachiw reported that it is understood that signing a written commitment would not be necessary for the restricted documents. A record of receipt may be signed to have a record of when the document was received by the RAB Members. Mr. Thomas McWilliams (RAB Member) asked if the restricted documents would have to be returned to APG upon a member's resignation from the RAB. Mr. Stachiw stated that the documents should be returned to APG for proper destruction, but stressed that no checklist will be compiled to ensure that a RAB member was returning all restricted documents.

Mr. Kappler suggested, regarding security issues, possibly performing background checks on future RAB applicants. Mr. Kappler also suggested providing new RAB Members with a list of responsibilities with regards to security and restricted documents. Mr. Henry stated that the suggestions should be submitted and discussed by the data security task group.

Mr. Crabb stressed the importance of the RAB Members being able to report to their community groups about APG activities. Mr. Crabb expressed concern that the community cannot be adequately educated without the RAB Members being able to distribute maps and figures depicting where the environmental issues are occurring. Mr. Henry stated that RAB Members could display the restricted maps to the public and educate them on the issues without providing copies of the maps to the public. Mr. Henry also stated that there is nothing restricting the RAB Members from telling other community members about ongoing activities at APG. Mr. Kaffl agreed that there are many ways to communicate the information to the public without creating a security concern.

Mr. Henry stressed that if a concern arises in which a RAB Member believes it is essential to distribute a restricted map to the public in order to educate the public about the environmental concerns, the data security task group will work to develop a solution to the problem. Mr. Stachiw explained that the proposal calls for the data security task group to be comprised of three community RAB Members, Mr. Stachiw, Mr. Kaffl, and an APGSCC member. Mr. Henry added that a representative of EPA and MDE should be included in the group.

Mr. Crabb provided a slide show of aerial photographs and other pictures of several APG areas that were downloaded from the Internet between January 1, 2003 and February 27, 2003. Mr. Crabb provided the presentation to reiterate the amount of potentially sensitive APG information that is readily available on the Internet. Mr. Henry stated that each RAB Member is responsible for how the data that was collected in the past is handled with regards to security issues and public education. Mr. Kaffl reiterated that the concern of OPSEC is to ensure that no additional sensitive information is uploaded onto the Internet for public use.

Mr. Stachiw stated that the proposal highlighted other information sources that could be problematic with security procedures. The sources include data tables, text descriptions of sites, and aerial photographs. Mr. Stachiw stated that the proposal requested a copy of the report from the January 2003 meeting between the TAG and Mr. Kaffl. Mr. Stachiw stated that Dr. Katherine Squibb (TAG Consultant) may have a copy of the report from the January meeting.

In reviewing the OPSEC-approved base map, Mr. Crabb requested that the roads be continued off-post to provide additional clarification. Mr. Kaffl stated that the roads could be continued to off-post areas as long as the information is included in the Army's GIS database.

Mr. Henry stated that the proposal for maintaining national security and environmental restoration at APG is only a draft. Mr. Henry and Mr. Stachiw encouraged the RAB Members to thoroughly review the proposal and bring any comments or suggestions to the 27 March 2003 RAB meeting.

IX. CLOSING REMARKS

At 10:00 pm, after confirming that no one present had further questions, Mr. Stachiw adjourned the meeting. The next APG IRP RAB Meeting will be held on Thursday, 26 March 2003 at 7:00 pm in the Edgewood Senior Center. The tentative topics for discussion are the Lauderick Creek CWM Removal Action, J-Field Study Area update, Canal Creek Study Area update, and a closed-door Operations Security (OPSEC) meeting with the RAB Members.